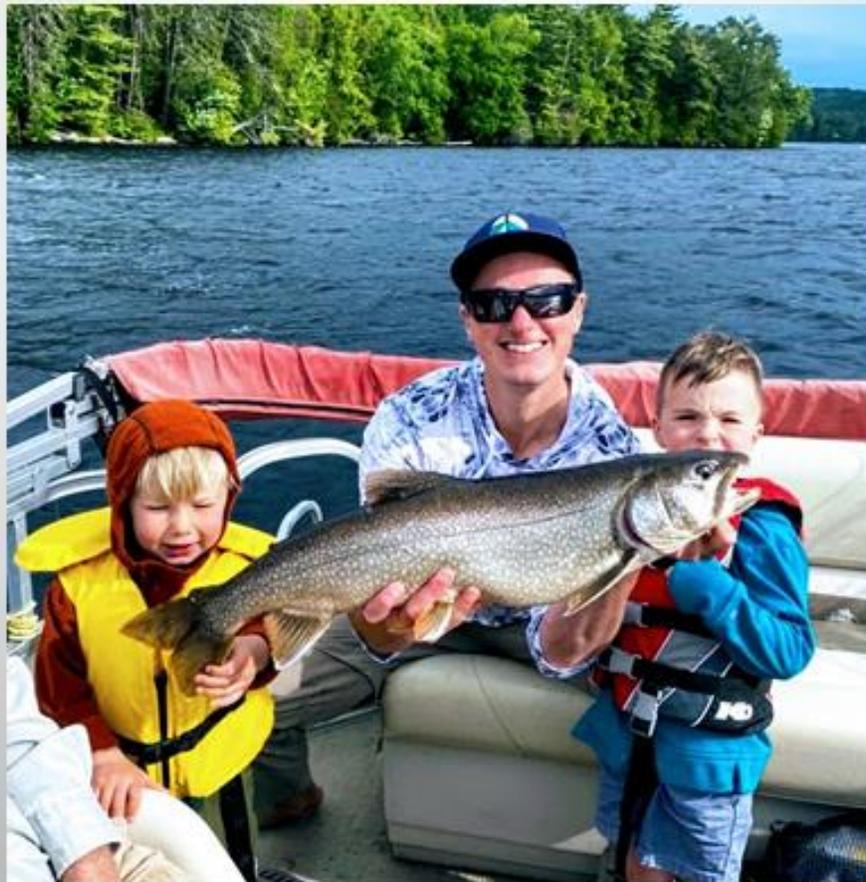


Environmental
Committee

Upper Saranac Lake
Association

Upper Saranac Lake 2021 Angler Diary Report February 7, 2022

By Larry Nashett, Chair, Environmental Committee



9lb.-15oz. Lake Trout - Upper Saranac Lake, 6/26/21

Photo by Joel Nashett

Introduction

The Upper Saranac Lake Association (USLA) Environmental Committee has managed a voluntary angler diary program to monitor the lake's fishery since 2016. The program documents trends by calculating annual catch rates and establishing length-frequency distributions for important fish species. The diary program tracks the lake's coldwater, warmwater and ice fisheries.

The New York State Department of Environmental Conservation offered its coldwater angler diaries for use in 2016, 2017 and 2018. New diaries, funded by the USLA and printed specifically for its Angler Diary Program, have been distributed each year from 2019 through 2021. USLA Angler Diary Reports, dating back to 2017 are available on line at https://uppersaranac.com/index.php?section=fishing_diary.

Eight cooperators, including two new volunteers, returned records of their fishing trips in 2021. Angler diary cooperators have been assigned numbers so that when individual catch and fishing effort statistics are reported, the cooperators can remain anonymous. The number is located on the cover of the diary provided annually to each cooperator.

To allow comparison of data over time, angler diary cooperator numbers remain the same, year after year. If you maintained a diary, it is possible that some data which you submitted was not used because an essential ingredient was lacking (such as the amount of time you fished on a particular day), or the diary arrived too late to be included in the data summary. As you read through this report, please keep in mind that the "Number of Angler-Hours" refers to the combined effort of the cooperator and any accompanying guests who have data recorded in the cooperator's diary. Should you have any questions, please contact Larry Nashett at 518-637-2885 or lnashett@roadrunner.com.

Results

Upper Saranac Lake angler cooperators focused most of their efforts on bass fishing. Two recorded a few hours spent fishing for yellow perch and sunfish, and two logged 8 outings in pursuit of lake trout. Recording the target species is important to allow a meaningful comparison of the Upper Saranac Lake fishery to those in other waters.

Please note that the number of bass reported in length frequency plots (Figures 2 and 3) may not be equal to those listed in Table 1. This is because the length frequency distributions are based on all bass caught that had recorded lengths. Alternatively, bass numbers reported in Table 1 are based only on the number caught that could be associated with an angler's effort to target bass (catch per hour).

Smallmouth Bass

Smallmouth Bass Catch Rates

Fisheries managers speak of fishing effort in terms of angler-trips and angler-hours. To clarify what these expressions mean, consider that an outing by an angler who fished alone would be tallied as one angler-trip. However, if that same angler was accompanied by a fishing guest, the outing would be counted as two angler-trips. Angler-hours are counted similarly. For instance, let's say two friends fish together from 8:00 am to 11:00 am. Each would have spent 3 hours actively fishing, and the effort put forth in this outing would be counted as 6 angler-hours.

Diary keepers reported a total of 189 angler-trips and 316.8 angler-hours over 126 outings. If a cooperator recorded two separate fishing periods on the same date, separated by some non-fishing time, these two periods would have been listed as two separate outings (Table 1). Cooperators caught 147 smallmouth bass in 2021 while specifically targeting them, resulting in a catch rate of 0.46 fish/hour. This catch rate was substantially lower than those calculated for 2018, 2019 and 2020.

Table 1. Targeted bass fishing effort and catch rates of smallmouth and largemouth bass by Upper Saranac Lake angler diary cooperators in 2021.

Angler	Overall Number of Outings	Overall Number of Angler-Trips	Overall Mean Trip Length	Angler-Hours Targeting Bass	Number Smallmouth Bass Caught	Smallmouth Bass Catch Per Hour	Number Largemouth Bass Caught	Largemouth Bass Catch Per Hour
1	17 ^a	18	2.57	45.8	37	0.81	7	0.15
2	19 ^a	24	2.30	54.5	42	0.77	4	0.07
3	22	43	1.56	65.8	50	0.76	21	0.32
6	40	70	1.36	100.5	10	0.10	1	0.01
7	8	9	1.50	13.0	5	0.38	1	0.08
9	3	7	1.25	0.0	0	N/A	0	N/A
17	5	5	1.85	3.50	3	0.86	0	0.00
18	10	13	2.23	33.8	0	0.00	46	1.36
Total	126	189	1.81	316.8	147	0.46	80	0.25

^a Cooperators 1 and 2 always fished together, but maintained separate diaries; on two occasions Angler 1 only controlled the boat and did not fish.

Figure 1. 2016-2021 Trend Comparison in Upper Saranac Lake smallmouth bass catch rates.

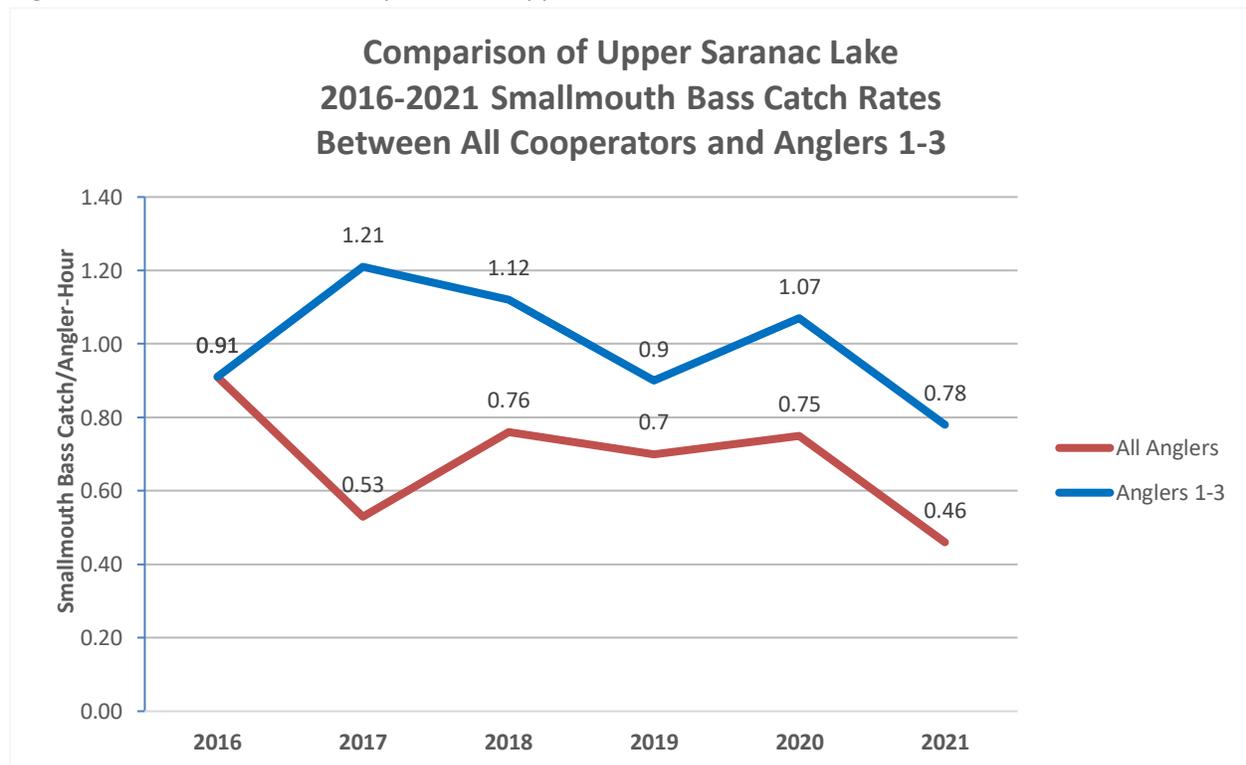


Table 2. 2016-2021 Comparison of Upper Saranac Lake targeted bass fishing effort and smallmouth catch rates by angler diary cooperators, numbers 1-3^a, over the program's six years.

	Year	Angler 1	Angler 2	Angler 3	Total
Overall Number Outings Fished	2016	13	13	8	34
	2017	16	16	18	50
	2018	18	18	19	55
	2019	17	17	31	65
	2020	0	0	33	33
	2021	17	19	22	58
Overall Number Angler Trips	2016	13	13	18	44
	2017	16	16	34	66
	2018	18	18	37	73
	2019	21	17	71	109
	2020	0	0	86	86
	2021	18	24	43	85
Angler-Hours Targeting Bass	2016	44.5	44.5	28.5	117.5
	2017	46.5	46.5	66.5	159.5
	2018	40.5	40.5	66.8	147.8
	2019	72.0	59.0	135.5	266.5
	2020	0	0	133.5	133.5
	2021	45.8	54.5	65.8	166.1
Overall Mean Trip Length	2016	3.42	3.42	1.50	2.67
	2017	3.10	3.10	2.00	2.42
	2018	2.25	2.25	1.80	2.02
	2019	3.47	3.47	1.86	2.70
	2020	0	0	1.60	1.60
	2021	2.57	2.30	1.56	2.10
Number Caught	2016	41	49	17	107
	2017	47	49	97	193
	2018	34	37	95	166
	2019	57	41	143	241
	2020	0	0	143	143
	2021	37	42	50	129
Catch Per Hour	2016	0.92	1.10	0.60	0.91
	2017	1.01	1.05	1.46	1.21
	2018	0.84	0.91	1.42	1.12
	2019	0.79	0.69	1.06	0.90
	2020	0	0	1.07	1.07
	2021	0.81	0.77	0.76	0.78

^a Anglers 1 and 2 did not fish during 2020, but they were included to maintain comparison continuity.

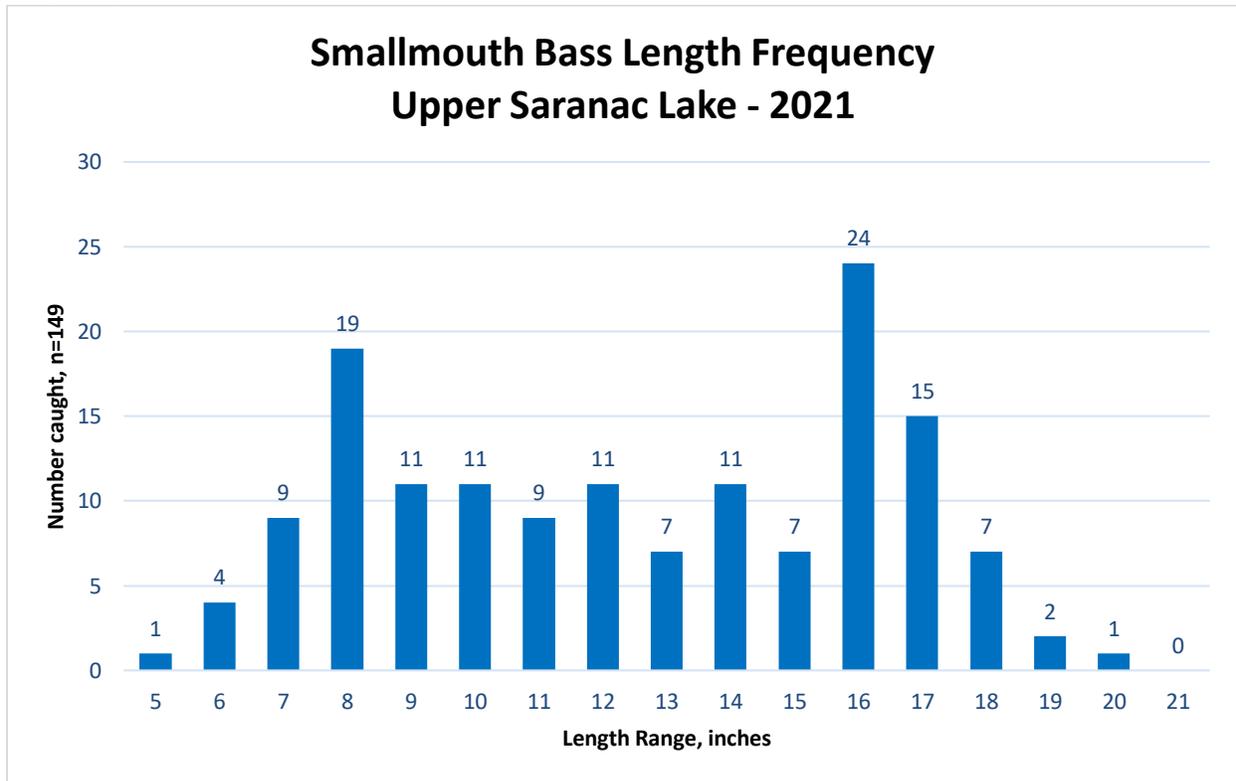


2021 Upper Saranac Lake smallmouth bass photos (provided by Will Main).

Smallmouth Bass Length Frequency Distribution

Figure 2 illustrates the smallmouth bass length frequency distribution based on 2021 angler cooperater data. Length ranges listed in the figure are abbreviated. Only the lower number in the 1.0-inch interval range is displayed. For instance, in the figure below, the 16.0-16.9-inch length range, which contains the highest number (24) of smallmouth bass in the overall catch, is depicted by the number 16.

Figure 2. 2021 Upper Saranac Lake smallmouth bass length frequency distribution resulting from angler diary cooperater data.



Largemouth Bass

Largemouth Bass Catch Rates

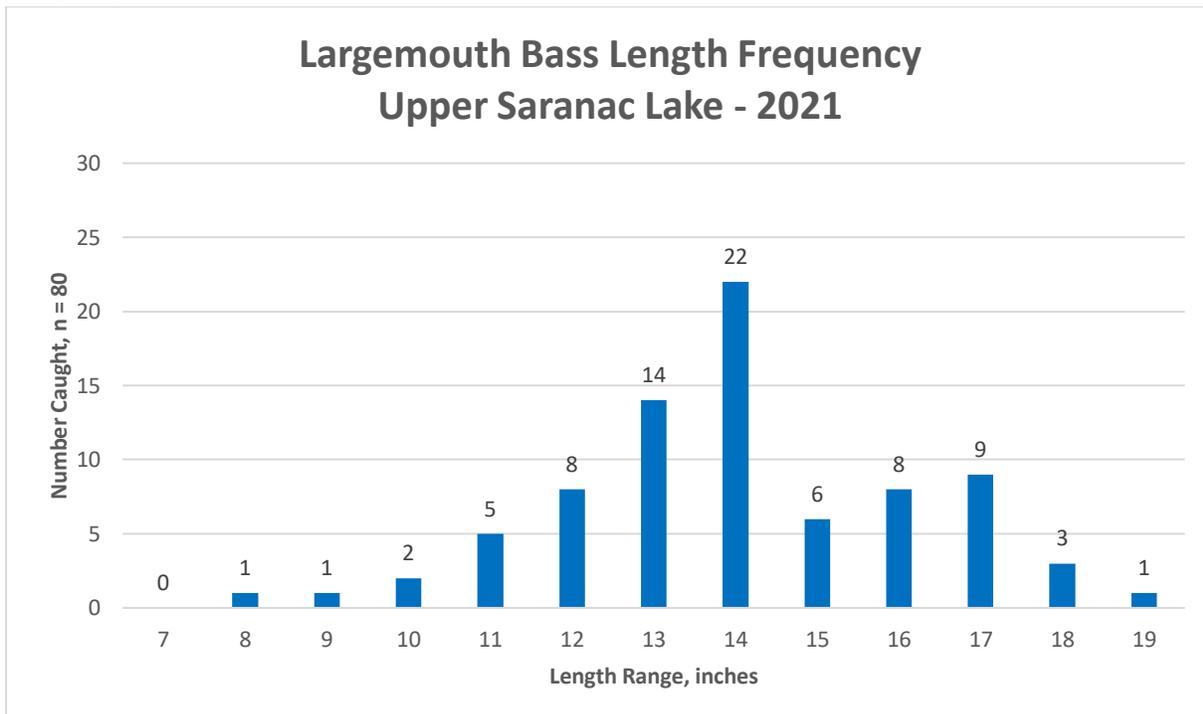
Although smallmouth bass dominated, 80 largemouth bass were boated and measured in the targeted catch. Six more largemouth bass, apparently not measured, but recorded as less than 12-inches long, were also caught and released. Angler-hours spent targeting bass were used in the rate calculations for both species. Excluding the unmeasured fish, approximately 0.25 largemouth bass were caught per angler-hour in 2021. The largemouth catch rate was higher than the 0.17 fish per angler-hour calculated for both 2019 and 2020.



Anglers and Upper Saranac Lake largemouth bass, 2021 (photos by Dave Powalyk and Will Main).

Largemouth Bass Length Frequency Distribution

Figure 3. 2021 Upper Saranac Lake largemouth bass length frequency distribution resulting from angler diary cooperator data.



Lake Trout

Lake Trout Catch Rates and Sizes

Two angler cooperators targeted lake trout on eight outings in 2021. They and their guests, expended a total of 22 angler-hours in their pursuit. Two lake trout were caught, measuring 28 inches and 29 inches. The 29-inch fish is pictured on the cover and weighed 9 pounds, 15 ounces. The overall, lake trout catch-per-unit-effort for these two cooperators and their guests was 0.09 fish per hour.



28-inch lake trout, 5-7-21.
Photo courtesy of Will Main.

Northern Pike

Northern Pike Catch Rates and Sizes

Three cooperators and their guests reported fishing specifically for northern pike in 2021. They logged four outings totaling 6.75 angler-hours, and they caught and released three northern pike. Their catch rate was 0.44 pike per angler-hour. The pike measured 20, 24.5 and 28.5 inches.

Yellow Perch

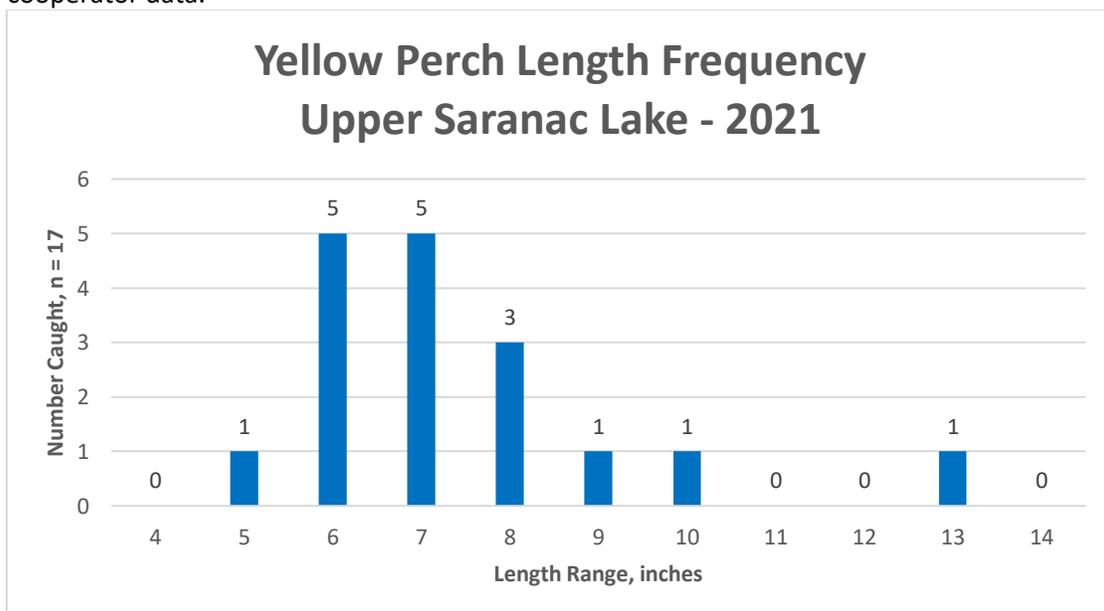
Yellow Perch Catch Rates

Angler cooperators reported catching a total of 22 yellow perch in 2021, and 14 of these were caught while specifically fishing for them. Their catch rate was 2.43 yellow perch per angler-hour. Five of these yellow perch, ranging from 4-6 inches long, were reported by one cooperator who was targeting them. These were included in the catches reported above, and used in the catch rate calculations. Because individual lengths of these five were not listed, they were not used in the length frequency distribution.

Yellow Perch Length Frequency Distribution

To help detect changes and trends, the yellow perch length-frequency distribution is being tracked. Although small in sample size, the 2021 distribution is presented in Figure 4.

Figure 4. 2021 Upper Saranac Lake yellow perch length frequency distribution resulting from angler diary cooperator data.



White Perch

In 2021, three angler cooperators reported incidental catches of nine white perch. Surprisingly, these fish were larger than I would have predicted for a population that was introduced in Upper Saranac Lake only a few years ago. They ranged from 8 to 14 inches in length. More typically an introduced white perch population becomes overabundant and stunted a few years after introduction. The average length of the nine specimens caught was 11 inches. White perch length frequency distributions, and possibly catch rates, may be monitored in future summaries if their numbers appear to increase.

Discussion and Conclusions

Smallmouth Bass

Length frequency distributions generated with angler diary data are similar to those constructed by biologists using scientific sampling gear. They can be used to describe age classes in a fish population, or the proportion of fish in a particular size range.

Eighty-five, or 57 percent, of the 149 smallmouth bass in this year's length frequency distribution were 12-inches (the minimum length limit) or greater in length. The first and very obvious peak in the distribution occurs at the 8-inch interval. These are probably 3-year-old fish, just recruited into the fishery, with 4-year-olds scattered through the 9- and 10-inch ranges. Less obvious peaks occur at the 12- and 14-inch length intervals. These likely represent 5-year-old fish. The highest peak, the mode of the distribution, is present at the 16-inch interval. These smallmouth bass are probably ages 6 and 7.

Comparing the 2020 and 2021 length frequency distributions for smallmouth bass shows strong similarities for numbers of fish between 6 and 13 inches long. However, the large numbers of 14- and 15-inch smallmouth bass in the 2020 distribution disappeared in 2021. The expectation was that they would grow into the 16 and 17-inch intervals, and perhaps they did. Yet, they were not replaced by smaller fish growing into the 14- and 15-inch size ranges in similar numbers. The largest number of smallmouth bass caught in any given length interval in 2021 was twenty-four. These were in the 16- to 16.9-inch length interval, but the number caught was substantially lower than the number of 16-inchers caught in 2020. Both plots were very similar for fish 17 inches and greater in length.

A 2021 catch rate of only 0.46 smallmouth bass per hour for all cooperators is the lowest recorded since the USLA Angler Diary program began. This is about 38 percent lower than the average rate of 0.74 recorded over the previous three years (2018-2020). The trio of anglers who have been part of the program since its inception also recorded an average catch rate (0.78 smallmouth bass per hour) that was approximately 24 percent lower than their combined, average catch rate of 1.03 smallmouth bass per hour over the same three previous years (Table 2).

So, what's the story? July is usually a very popular month for fishing on Upper Saranac Lake. However, the Upper Saranac Foundation's Environmental Monitoring Platform website, located at <https://adkwatershed.shinyapps.io/UpperSaranacLake/>, confirms that July 2021 was notably rainy and cool. These factors may have played a role in the decreased catch rate. Alternatively, some of the larger fish may be aging out of the population. The good news is the relatively large number of young bass in the 8.0-8.9-inch length interval recorded in 2021. This peak suggests that a strong year class was produced in 2019 that will generate good fishing in future years.

The average, smallmouth bass catch rate (0.78 fish per hour) of Anglers 1-3, who have participated in all six years of this program, is certainly that of a reasonably high-quality fishery. Yet, it doesn't hold a candle to their outstanding catch rates hovering near, or greater than, 1.0 smallmouth bass per hour observed from 2016-2020. Let's hope that these rates bump back up in 2022 and future years.

Largemouth Bass

Eighty largemouth bass were caught (and measured) by angler cooperators in 2021 (Figure 3). Nine were below the legal size limit of 12-inches; 71 were 12-inches or longer. The greatest number (22) of largemouth bass in the catch fell into the 14-inch length interval. Based on past age determinations of many largemouth bass, and taking into consideration their short Adirondack growing seasons, my guess is that these 14.0-14.9-inch largemouths are 5- or 6-year-olds.

The ratio of largemouth bass to smallmouth bass in the 2021 targeted catch, excluding the six unmeasured fish, was about 1 for 2, or roughly two smallmouth bass were caught for every largemouth landed in 2021. The exact ratio was 1:1.84. This is substantially different than the ratio of 1:4.32 observed in 2020 and 1:4.06 in 2019. I attribute this to the participation of a new angler cooperator who joined the program in 2021. His diary accounted for 46 of the 80 largemouth bass tallied last year. The big change in the ratio of largemouth to smallmouth bass observed in 2021 is likely due to the techniques and fishing locations of the new cooperator. In 2018, the catch ratio was 1:9 compared to 1:7 in 2017. This trend of increasing ratios was first noted by an angler cooperator who has maintained long-term, personal records showing the ratio was 1:10 in 2016 and 1:20 in 1998. Despite the big difference that occurred in 2021, the fact that the ratio has held nearly steady from 2019 to 2020, may indicate that the proportion of largemouth bass to smallmouth bass is stabilizing.

Lake Trout

USLA angler cooperators caught only two lake trout in 2021. Therefore, little more can be stated about the status of their fishery in Upper Saranac Lake other than the information already presented at the top of page 6. More anglers who fish for lake trout are needed as diary cooperators.

Table 3. Recent stocking history of lake trout in Upper Saranac Lake, 2013-2020 (records for 2021 are expected to be available in May, 2022).

Source: <https://data.ny.gov/Recreation/Fish-Stocking-Lists-Actual-Beginning-2011-Data-Len/9hpx-asd8>

Year	Month(s)	Number	Size (inches)
2020	April, May, October	10,500; 3,500; 5,000	6.5, 6.7, 5.4
2019	April	9,840	8.0
2018	May	10,500	6.4
2017	April	10,500	6.5
2016	April, May	5,900; 2,000	7.0, 6.9
2015	May	10,500	6.3
2014	April, June	10,500; 4,000	6.5, 6.7
2013	May	7,590	7.1

Northern Pike

The catch rate for this species in 2021 was calculated at 0.44 northern pike per angler-hour. Put another way, it took a targeted effort of 2 hours and 16 minutes to catch a northern pike by USL Angler Diary cooperators in 2021. Although that's not a high catch rate, I would describe it as moderately

respectable, especially since there is so little effort directed at catching this species. All pike recorded in the catch exceeded the minimum legal length limit of 18 inches. Upper Saranac Lake appears to support a low density, but high-quality, northern pike population.

Yellow Perch

The 2021 yellow perch length frequency distribution in Figure 4, constructed with 17 individual perch, shows that the majority of yellow perch caught were in the 6- and 7-inch length ranges. The sizes of yellow perch caught by angler cooperators this year is an improvement over that for 2020, when the majority were in the 4- and 5-inch length intervals. Only two cooperators spent time in 2021 targeting yellow perch.

Yellow perch catch records have been maintained in this angler diary program since 2017. The lion's share of yellow perch reported are part of the by-catch taken while fishing for other species. Excluding the targeted catch (32 specimens in 2020, and 14 in 2021), the by-catch has been trending downward, as shown in Table 4, below:

Table 4. Non-targeted by-catch of yellow perch reported by angler diary cooperators, 2017-2021.

Year	2017	2018	2019	2020	2021
Number	59	29	16	3	8

The yellow perch population structure has changed. Downward trends in size and number are evident. This upset may now be stabilizing. In my opinion the relatively recent, unauthorized introduction of white perch in the lake's fish community has caused these changes.

White Perch

White perch were first reported in Upper Saranac Lake in 2016. An Upper Saranac Lake Association angler diary cooperator provided an 11-inch-long white perch in 2019, that has been registered as a voucher specimen with the New York State Museum's collection, officially documenting the species' presence in Upper Saranac Lake. His catch was transmitted through the USLA Environmental Committee to the New York State Department of Environmental Conservation.

White perch are here to stay. Although it may require a mind shift, I encourage anglers to enjoy their presence, especially if their size range remains as it is now. They're fun to catch, an excellent species to use for introducing new anglers to fishing, and they make decent table fare.

Other Species

Angler cooperators reported catching four fallfish from 7-16 inches long and five pumpkinseed sunfish from 7- 8 inches long. Four additional pumpkinseeds ranging in length from 2-6 inches were also reported.

Recommendations

(The following recommendations are identical to those made in 2019 and 2020.)

1. Utilize the USLA Angler Diary program to monitor catch rates and length frequency distributions for the lake's smallmouth bass and largemouth bass fisheries. These exceptional fisheries deserve conservation and care. Encourage responsible fish handling techniques, including catch and release angling, and the reporting of any observed habitat destruction, such as unmitigated disturbance of near-shore spawning areas.

2. Continue to investigate use of a cell-phone-accessible, virtual “diary”, that will allow cooperators to record fishing trip and catch information in real time.
3. Focus additional effort on working with lake stewards at the Upper Saranac Lake and Fish Creek Campground Boat Launch Sites to recruit new angler diary cooperators. Provide business-type cards and angler diaries for them to distribute to anglers who plan to fish in Upper Saranac Lake.
4. Monitor the catch of yellow and white perch in the fishery and note obvious trends.
5. Hold an angler diary cooperator meeting annually to respond to questions, recruit new cooperators and encourage proper completion of diary pages.
6. Share these Angler Diary Reports with NYSDEC and the Upper Saranac Foundation.

Angler cooperators who contributed to this effort deserve a big “thank you”. Good luck fishing in 2022!

Spencer Main’s 18.5-inch largemouth bass took first place in the Youth Division of the Upper Saranac Lake Association’s 2021 Fishing Derby (Photo by Will Main).

